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| 10/500,274                  | 06/28/2004  | Masataka Ozeki       | MTS-3506US          | 9342             |
| 23122                       | 7590        | 09/24/2008           |                     |                  |
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| WANG, EUGENIA               |             |                      |                     |                  |
| ART UNIT                    |             | PAPER NUMBER         |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/500,274

**Applicant(s)**

OZEKI ET AL.

**Examiner**

EUGENIA WANG

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 July 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.  
4a) Of the above claim(s) 10 and 11 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-9, 12 and 13 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. In response to the amendment received July 30, 2008:
  - a. Claim 13 has been added as per Applicant's request. Claims 1-13 are pending, with claims 10-11 being withdrawn as drawn to an unelected invention.
  - b. The previous prior art rejection of record has been withdrawn in light of the amendment. However, a new rejection is applied, as necessitated by the amendment.

***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 30, 2008 has been entered.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-9, 12, and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application

was filed, had possession of the claimed invention. Claims 1-9, 12, and 13 recite the claim language that the instructing means comprises a "computer processor programmed with software instructions." The newly introduced claim language is not supported by the originally filed Specification. Although an instructing means is supported, there is no support that such an instructing means is a computer processor programmed with software instructions. The Specification does not mention the use of a computer, being programmed, or including software instructions. The portions relied on by Applicant to provide support for having the features of a computer processor programmed with program instructions (p 17, line 10 to p 19, line 8; p 24, lines 4-24; page 31, line 23 to p 32, line 9; fig. 4; fig. 6) fail to provide such support as nowhere does the recitation of a computer processor, program, or software exist. The figures provided are merely algorithms, and for example could be performed by a person getting data on a screen and manually operating valves in the correct process manner. Accordingly, there is no support in the original disclosure for the current amendments to the claims, and thus they are seen to be new matter.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 3, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/92050 (Yamanashi) as evidenced by US 5989739 (Zur Megede et al.) and in view of US 6797418 (Nomura et al.), and US 2002/0051899 (Keskula et al.).

As to claim 3, Yamanashi teaches a fuel cell system that generates electricity via hydrogen gas (generated from methanol) (fuel) and oxygen gas (oxidizer) (p8, lines 9-15). There is a fuel reform reactor [120] (fuel processor) that produces the fuel to be supplied to the fuel cell from the fuel (via fuel injector [145]) (fig. 1). Combustor [140] (combustion device) combusts residual fuel gas that was unconsumed in the fuel cell

(seen in fig. 1). This action raises the temperature of the reactor (reform reactor [120]), since the exhaust gas (heated from the combustor) is ultimately delivered to the reform reactor [120] (fuel processor). Furthermore, the power manager [210] takes the electricity generated from the fuel cell stack [200] and delivers it to a motor (p 8, lines 24-28). The power manager [210] in conjunction with controller [300] acts as an electric power generation instructing means, as it (the power manager [210]) delivers the needed power via the fuel cell and a secondary battery to the motor, and thus inherently determines how much electric power is generated by the fuel cell in order to determine how much electricity is needed from the secondary battery to deliver to the motor (load), wherein the power manager is controlled by the controller [300]. Yamanashi's fuel cell system has power manager [210], temperature sensor [122] of the reform reactor [120] (fuel processor), as well several of injectors [145, 151, 152] and flow rate valves [121, 141, 131] connected a control unit [300], as indicated by the dashed lines. The control of the fuel, water, and air flow rates would controls how much reactant is delivered to the fuel cell, and thus the rate at which power is generated and supplied. It is further noted that Yamanashi's invention is drawn towards the prevention of fuel from being excessively used during a low-load driving state, wherein the fuel is provided by the reforming system, wherein the fuel is provided to the reformer to maintain the temperature of the reformer (p 4, lines 9-23; p6, lines 26-35).

Note: The lowering of fuel provided to the reforming system with respect to a decrease in load demand (as taught by Yamanashi) inherently decreases the power generated by the fuel cell.

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)

In the case of the instant application the basis for expectation of inherency is that the current (power) supplied by fuel cell is proportional to how much fuel is supplied. The more fuel supplied, the more electricity (current, power) can be generated by the fuel cell. The less amount of fuel supplied to the system (even via reformer), the less electricity that is generated. Zur Megede et al. is relied upon as an evidentiary piece to show that such a relationship is true (see col. 2, lines 30-46). Accordingly, decreasing the amount of fuel provided to the reformer would reduce the amount provided to the fuel cell, thus resulting in a lower amount of energy generated.

The Examiner requires applicant to provide that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product.

Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

Yamanashi does not specifically teach of (a) decreasing the electric power generated by the fuel cell at a rate depending on either a change in the temperature of the fuel processor and the temperature of the fuel processor, wherein (b) the process steps of both (a), above, and decreasing electric power generated by the fuel cell depending on a decrease of load power to the supplied fuel cell (as inherent to Yamanashi) are done using a computer processor programmed with the software instructions.

With respect to (a), Nomura et al. teach the temperature of a fuel processor, wherein the temperature of a fuel processor can be used to indicate the supply of fuel within the processor, wherein the data can be used to adjust the supply (col. 3, lines 13-26). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the temperature of a fuel processor to adjust the amount of fuel entering the fuel process (which in turn affects the electricity generated, as evidenced by Zur Megede et al.), since such a combination merely combines known elements, which would perform the same function as it did separately, wherein the combination would have yielded the predictable result of controlling fuel supply to the



processor and in turn affect the amount of electricity generated. (Note: By changing the amount of fuel sent to the fuel cell for electric generation, the rate of power would change as well, since Zur Megede shows that these two variables are linked.)

With respect to (b), Keskula et al. teach of a fuel cell with a controller system, wherein a suitable controller can be a computer with a control program or implemented software (para 0049). Accordingly, one of ordinary skill in the art at the time the invention was made would have recognized that having a controller that was a computer programmed with software would have yielded the predictable result of operating a controller. Therefore one of ordinary skill in the art at the time the invention was made would have found it obvious to use a computer programmed with software as the control system (of Yamanashi as evidenced by Zur Megede et al. in view of Nomura et al.), as it would have resulted in the predictable result of functioning as the controller.

As to claim 1, the combination of Yamanashi as evidenced by Zur Megede et al. in view of Nomura et al. and Keskula et al. would inherently change a rate depending on a change in temperature of the fuel processor (as Yamanashi evidenced by Zur Megede et al. indicate lowering generated electricity at a low demand by lowering fuel provided, and Nomura et al. teach that fuel supply can be controlled with temperature data of a fuel processor). Accordingly, controlling fuel with respect to the temperature also embodies the fact this is indicative of a change in the temperature.

As to claim 12, the combination of Yamanashi as evidenced by Zur Megede et al. in view of Nomura et al. and Keskula et al. would inherently change a rate depending on

a temperature of the fuel processor (as Yamanashi evidenced by Zur Megede et al. indicate lowering generated electricity at a low demand by lowering fuel provided, and Nomura et al. teach that fuel supply can be controlled with temperature data of a fuel processor).

***.Conclusion***

5. Although no prior art has been applied to claims 2, 4, 5-9 and 13, this is not an indication of allowability. They are still rejected under 112(1), wherein no statement with respect to allowability can be made until the 112 issues are clarified.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EUGENIA WANG whose telephone number is (571)272-4942. The examiner can normally be reached on 7 - 4:30 Mon. - Thurs., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. W./  
Examiner, Art Unit 1795

/PATRICK RYAN/  
Supervisory Patent Examiner, Art Unit 1795